IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Akio AOYAMA

Serial No.: 10/700,483 Group Art Unit: 2617

Filed: November 5, 2003 Examiner: Casca, F.

For: **METHOD OF COLLECTING INFORMATION IN MOBILE COMMUNICATION SYSTEM**

Commissioner of Patents
Alexandria, VA 22313-1450

APPELLANT'S REPLY BRIEF ON APPEAL

Sir:

Appellant respectfully replies herein to the Examiner's Answer mailed on November 10, 2011. Since the Examiner has raised a number of new issues in the Answer, consideration of this Reply Brief by the Board is both appropriate and required. Along this line of new issues, it is noted that the Final Rejection mailed on January 20, 2011, provided no responses to Appellant's arguments then of record. Rather, in that Office Action, the Examiner merely asserted that new grounds of rejection had been applied, without providing a reasonable support for the new rejection or any explanation or response to Appellant's arguments of record. Therefore, Appellant has had no chance to respond on the record to many points now raised by the Examiner.

It is further noted that on page 4 of the Advisory Action mailed on June 7, 2011, the Examiner withdrew the rejection for claims 20-26, 62-67, and 74-87. On page 4 of the

Examiner's Answer, the Examiner contradicts himself, now declaring that these rejections are still active for purpose of this Appeal.

The new issues of the Examiner's Answer, along with Appellant's responses, are identified below. But, it is noted, as a summary of this Reply Brief, that, as Appellant has pointed out repeatedly throughout prosecution, there would be at least one element remains missing even if references were to be combined as urged, and, relative to the reasonableness of the urged combinations, this evaluation is devoid of any aspect of "as-a-whole", as is required by the final clause of 35 U.S.C. §103(a).

1. The Written Description Rejection (GROUND 1)

In paragraph 1 on page 4 of the Answer, the Examiner has changed the identification of the claims rejected under 35 USC § 112, first paragraph, from the listing identifying in the Advisory Action mailed on June 7, 2011, thereby clearly raising a new issue to which Appellant must respond.

That is, on page 4 of this Advisory Action, the Examiner clearly indicated that the rejection for claims 20-26, 62 - 67, and 74 – 87 was withdrawn. On page 4 of the Answer mailed on November 10, 2011, the Examiner now indicates that these claims are being maintained as rejected under §112.

On page 24 of the Answer, the Examiner further addresses this rejection, clearly indicating that the Examiner has (improperly) simply discounted pages 1 – 17 of Appellant's Appeal Brief as allegedly providing only a summary and prosecution history, with actual arguments beginning on page 18. The Examiner then proceeds to allege that "*... there is no detail section in the appellant's appeal brief, [and] there is [no] detailed description in any of the previously filed arguments.*"

In response, Appellant points out that the Examiner is clearly incorrect. The section in the Appeal Brief that clearly demonstrates the support in the specification of the claims is the SUMMARY OF CLAIMED SUBJECT MATTER on pages 3 - 15 of the

Appeal Brief. The support for the claims was also provided on pages 17-18 in the Amendment Under 37 CFR § 1.116, filed on May 6, 2011.

Therefore, it is respectfully requested that the Board confirm that the locations in the specification identified on pages 3 – 15 of the Appeal Brief do indeed provide a reasonable demonstration of locations in the originally-filed specification that fully support the contents of these rejected claims, since there is clear support that Appellant originally described the solution to enhancing maintenance of a mobile communication system by providing map coverage for a plurality of different criteria, each criterion being selectively presented on a separate map.

However, in order to respond to the Examiner's specific allegations in paragraph 1 beginning on page 4 of the Answer, Appellant repeats below the specific wording from the specification believed to provide complete support for the claims newly rejected by the Examiner, as follows for claim 20, as representative of the description already provided in the Appeal Brief, with additional clarification regarding the word "criteria", which seems to be the Examiner's main issue for reinstating/maintaining this rejection for these claims on page 4 of the Answer:

Claim 20. A system (Fig. 2) for collecting information used for adjustments in a radio communication system for performing user communication (lines 6-8 of page 1), comprising:

at least one mobile radio terminal (21, 22, Fig. 2) that monitors a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria, and if a trigger (101, Fig. 4) is detected when a change of said communication status has satisfied a predetermined condition of one of said predetermined criteria, acquires a reception status of a radio signal (102, Fig. 4; lines 15-23 of page 9) and a coordinate position of the mobile radio terminal, and sends information including said reception status and said coordinate position (line 24 of page 9 through line 6 of page 11); and

an information collecting server (1, Fig. 2) that receives said information from said mobile radio terminal (lines 3-7 of page 12),

wherein the information which has been received is recorded as collected information as data for developing a service map of said radio communication system, each said predetermined criterion providing data for a different service map (lines 7-20 of page 14).

It is noted that clear support in the original specification for the phrase "predetermined criteria" is found in lines 2-9 on page 10, where the phrase "predetermined criteria" wording was clearly chosen by the initial US practitioner as intended to be a more precise word equivalent to "communication status information" in these following lines on page 10 (emphasis by Appellant):

"*Examples of the communication status information are information indicating that the mobile radio terminal is unable to receive a radio signal from a radio base station and user communications are forcibly shut off, and information indicating that the mobile radio terminal is unable to make an outgoing call to another mobile radio terminal. Other examples of the communication status information are information indicating a handover failure and information indicating a communication throughput.*"

Other exemplary criteria are clearly described in lines 7-20 of page 14, and lines 10-11 clearly describes that different maps are obtained for the different criteria (support for the claim word "criteria" is clearly found in the description "... *various operations of the radio communication system...* " in line 8 and in the description "... *various statuses....*" in line 11):

"*The measured information collected by information collecting server 1 is related to various operations of the radio communication system depending on the trigger conditions. Consequently, not only a map representing an association between positions and reception statuses, but also maps related to various statuses are obtained. For example, a map of information that is acquired when user communications are forcibly disconnected is useful for estimating an area where a radio-wave arrival status is poor. A map of information that is acquired when a handover failure occurs is useful for estimating a position where there is a coverage interruption between radio base stations. A map of information that is acquired when a throughput is lower than a predetermined threshold value is useful for estimating a position where a communication quality is poor. A map of information that is acquired when a call is made is useful for estimating a position where many users are present.*"

The reason that the criteria (plurality of criterion) is significant in the present invention relative to the conventional methods of gaining service information from the mobile radio terminals (as opposed to dispatching dedicated measuring vehicles or dedicated measuring teams to measure reception status information) is explained beginning

at the bottom of page 4 of the specification and particularly at lines 5-6 on page 5 in that each such conventional method:

"*... fails to appropriately recognize causes of changes in the reception status and phenomena brought about by changes in the reception status.*"

Thus, by using such plurality of criterion (criteria), each providing different trigger conditions for reporting the currently-acquired reception status of the radio signal and the currently-acquired coordinate position, the present invention provides a mechanism so that information for multiple maps related to various statuses (criteria) of the coverage area is obtained, so that changes in the reception status and phenomena brought about by such changes can be determined (see lines 5-6 of page 5 and lines 21-23 of page 14), using two parameters, current reception status and current position, commonly-reported for each criterion (status).

This concept of using common reporting parameters for different trigger conditions (because different criteria have different trigger conditions) is new in the art and provides a mechanism so that *changes* in reception status for the coverage area can be determined relatively quickly by reporting from user stations upon occurrences of different conditions, rather than constantly and periodically sending out measuring crews. None of the references of record provides this capability to substantially instantaneously detect the reasons/causes for changes in reception status for the coverage area, and this benefit results because the present invention uses a plurality of different reporting criterion, while still reporting the two common parameters of current reception status and coordinate position.

Thus, by knowing which criterion has triggered the report of current reception status of the radio signal and the coordinate position, the collection server instantaneously collects information so that the reason and cause of changes in reception status for the coverage area can thereby be determined relatively quickly. Again, this concept and mechanism is new in the art and no prior art reference currently of record even recognizes the problem being addressed by the present invention, of relatively quickly detecting the reason/cause of *changes* in reception status for the entire coverage area.

Appellant respectfully submits that there is no reasonable basis for considering that Appellant, at the time of the invention, did not have possession of the concept of reporting a plurality of criterion for purpose of being able to detect changes in the cover area, based on the locations of the originally-filed specification, as cited above, or that there would be any undue experimentation to one of ordinary skill in the art to develop the claimed invention, based on the description in the disclosure.

Moreover, in carefully reviewing the Examiner's response beginning on page 24 of the Answer and in view of the clear support in the specification for the various reporting criteria and the Examiner's contradictions and inconsistencies on the record for this rejection, Appellant believes that the Examiner more likely continues to maintain this "written description" rejection simply because the original specification did not include the word "criteria." Therefore, Appellants suspects that the Examiner actually intended this "written description" rejection to mean a lack of antecedent basis for the word "criteria" in the original specification, which is, of course, a different rejection from that currently of record.

In response, Appellant respectfully summits that the claim wording is permitted to evolve during prosecution to depart from wording not originally filed, as clearly explained in MPEP §608.01(o) and MPEP §2173.01. The word choice of the original US practitioner would have been easy to remedy earlier in prosecution, had the Examiner properly articulated his real concern. That is, lack of antecedent basis can easily be addressed either by choosing a different choice of word or by adding the proper antecedent basis in the specification by a specification change.

Therefore, Appellant believes that the specific locations in the specification for all claims, as clearly described on pages 3-15 of the Appeal Brief, does indeed demonstrate clear and complete support for all limitations of all claims, particularly when the original specification wording "*communication status information*" at the top of page 10 and the specification wording "*various operations of the radio communication system*" and "*various statuses*" on page 14 is understood as clarifying and supporting the use of the word "*criteria*" in the claims.

In view of the foregoing, Appellant respectfully submits that all claims currently pending are indeed properly supported in the specification, as clearly identified on pages 3-15 of the Appeal Brief and the Board is respectfully requested to reverse this rejection or, alternatively, to remand to the Examiner for purpose of addressing the real issue of the lack of antecedent basis for the choice of claim wording. As pointed out above, the present invention uses criteria (*i.e., a* plurality of criterion) of different reporting conditions for purpose of being able to instantaneously accumulate data over the entire coverage area that can be used to determine the *reason and cause for changes* in reception status for the coverage area. This approach, as defined in the independent claims, is clearly new in the art and is clearly non-obvious over the references currently of record, if for no other reason than the present inventor has recognized a new problem in this art and has provided one possible solution to this new problem by providing a mechanism in which common parameters are reported to the collection server for different trigger conditions.

2. The New Issue in the Rejection of Claims 20, 21, 25, and 26

In the final paragraph on page 13 and continuing through the first two paragraphs on page 14 of the Examiner's Answer, the Examiner adds comments not previously of record concerning the rejection of these claims, by adding the new argument that one having ordinary skill in the art would consider handoff regions as subject to mapping, since such handoffs are "RF holes" in the coverage area. Thus, the Examiner clearly raises a new issue requiring Appellant's response.

Appellant respectfully responds that handoffs between two different base stations is a different concept from an "RF hole", contrary to the Examiner's new characterization in the Answer. An RF hole results if there is no base station that can sufficiently cover a region in the cover area. Contrary to the Examiner's characterization, an RF hole inherently does not exist in a cover area if a mobile station is successfully handed off to a second base station. Appellant has explained repeatedly during prosecution that, contrary to the Examiner's allegation that secondary reference Ma is needed to show the handoff between base stations, both primary reference Veerasamy and secondary reference Ma inherently use base station handoffs (see paragraphs [0032 & 0033] of primary reference Veerasamy and paragraphs [0036 & 0037] of secondary reference Ma) to provide coverage to a mobile terminal as it moves through the cover area. This handoff capability is inherent for current mobile communication systems and is different from an RF hole, contrary to the Examiner's characterization. An RF hole in the mobile communication system occurs if no base station adequately covers a specific region within the system, for whatever reason.

That is, a base station may currently be out-of-service or otherwise unavailable to cover a current location of a mobile terminal, or there might be areas within the cover area for which there is no base station service available. These are exactly the types of dynamic conditions that the present invention is directed toward, to instantaneously acquire data for such changing conditions throughout the entire system, without having to constantly and periodically send out measuring teams. The concept of collecting data from different

criteria, in order to continuously monitor for and detect changing conditions throughout the entire cover area is clearly new in the art.

Moreover, contrary to the Examiner's characterization, there is no suggestion in any prior art currently of reference to consider routine base station handoffs to be subject to mapping for demonstrating potential service problems and no reference currently of record suggests sending status conditions for handoffs to a server dedicated to collecting data for maintenance/service of the system, such as RF COVERAGE SERVER 195 of Veerasamy. Clearly, using handoffs as one criterion for reporting to a collection server is introduced into the art by the present invention, not any of the cited references.

Therefore, the Examiner is simply incorrect in his new argument that characterizes base station handoffs as being equivalent to RF holes and is clearly incorrect in characterizing that one of ordinary skill in the art would have any reason whatsoever to provide information on base station handoffs to a server dedicated to collecting maintenance data for providing service maps, absent impermissible hindsight provided solely by the roadmap of the present application.

As Appellant has repeatedly explained during prosecution, secondary reference Ma adds nothing of merit to the evaluation as based on primary reference Veerasamy. As explained many times during prosecution, primary reference Veerasamy already provides handoff capability, as clearly described in paragraphs [0032-0033], including the reporting of the signal strength to the base stations by the mobile units. As explained many times during prosecution, neither primary reference Veerasamy nor secondary reference Ma teaches or suggest reporting signal strength to a server collecting coverage data, such as RF COVERAGE SERVER 195 of Figure 1 of Veerasamy. Therefore, as explained many times during prosecution, even if Ma were to be combined with primary reference Veerasamy, there would still be at least one element missing from even the independent claims.

For this reason alone, all claims are clearly patentable over the references currently of record.

Moreover, the Examiner's attempt to justify the routine handoff procedure of secondary reference Ma, which routine handoff procedure is already present in primary reference Veerasamy and in all conventional mobile phone systems, as allegedly demonstrating the missing elements of the independent claims, is one more demonstration of an improper piecemeal evaluation. As clearly defined in the final clause of 35 U.S.C. §103(a) itself, the correct evaluation for obviousness requires the invention be evaluated "as a whole."

In the context of the present evaluation, Appellant respectfully submits to the Board that this "as-a-whole" aspect would require the evaluator to eliminate bias of hindsight by stepping back and viewing the urged combination of Veerasamy and Ma, asking whether, given these two references without any roadmap provided by the present application, the claimed invention would be obvious. That is, if these two references are juxtaposed together as urged by the Examiner and then presented to one having ordinary skill in the art without presenting any suggestion of the claimed invention, would the claimed invention "pop out" to this person of ordinary skill. If the claimed invention would not be readily evident from this simple presentation of the cited reference, as isolated from the suggestion of the claimed invention, then such failure to immediately arrive at the claimed invention clearly weighs heavily toward a conclusion of non-obviousness.

In the present evaluation, if Veerasamy and Ma were to be presented to one of ordinary skill, that person would still have to modify both of these references to arrive at the claimed invention, and would have no reason to modify either one.

That is, primary reference Veerasamy would have to be modified to so that a criterion other than service drops be sent to the RF COVERAGE SERVER 195. Veerasamy would also have to be modified so that reception status is sent to RF COVERAGE SERVER 195, in addition to position and time of the service drop.

Secondary reference Ma is relied upon as allegedly demonstrating to send the reception status to the collecting server. However, contrary to the Examiner's characterization, secondary reference Ma does not send reception to any collecting server. Rather, lines 1-4 of paragraph [0036] clearly describes that the mobile stations send pilot

signal strength messages to the base station, which does not correspond to the RF COVERAGE SERVER 195 of primary reference Veerasamy. Moreover, as clearly described in paragraph [0032], primary reference Veerasamy already uses the same feature of sending pilot strength messages to the base station. There is no suggestion in Veerasamy to forward these pilot strength messages to its RF COVERAGE SERVER 195, so neither Veerasamy nor Ma supplies this missing element.

If Veerasamy and Ma were to be juxtaposed together without benefit of a roadmap of the claimed invention, it would clearly not be obvious to make modifications to these two juxtaposed references so as to arrive at the invention defined in the independent claims. Stated slightly differently, since neither reference teaches or suggests reporting reception status to RF COVER SERVER 195, even if Veerasamy and Ma were to be combined, there would still be at least one missing element, as Appellant has pointed repeatedly during prosecution.

In view of the foregoing, Appellant respectfully requests that the Board recognize that this additional argument by the Examiner provides objective evidence that this Examiner remains fundamentally confused about the operation and technology of conventional mobile systems, and that such fundamental confusion shows up repeatedly in the prosecution and the Examiner's evaluation of the present invention.

3. The Examiner's Responses to the GROUND 2

The New Issue of Ordering of Steps in Claim 1

Beginning at the bottom of page 25, the Examiner, for the first time during prosecution provides a response for Appellant's GROUND 2, thereby raising an entirely new argument for the first time during prosecution.

The Examiner now alleges, for the first time during prosecution, that the steps of claim 1 can be interpreted broadly so that there is no particular order and/or correlation.

In response, Appellant brings to the Board's attention that this new position is clearly based upon improperly characterizing the claim language by using only a limited number of words from the claims. To one of ordinary skill and particularly in view of the description in the specification, the correlations between claim elements are clearly defined in claim 1 when *all* the words of this claim are properly considered.

That is, the preamble clearly describes that the claim is directed to collecting information in a radio communication system. The body of the claim then clearly defines a series of steps that occurs in a mobile radio terminal, including a first step of monitoring communications status. The second and third steps define that reception status and coordinate position are acquired, although it is clear that ordering of these two steps would not be important since it would not be significant which of these parameters were acquired first or were even acquired simultaneously. The fourth step clearly defines that the information for the acquired reception status and coordinate position are sent to the information collecting server.

To one of ordinary skill in the art, there is no reasonable possibility of confusion whatsoever about how these steps would have to occur, since there is no way that one could interpret that the information be sent unless the information has been acquired first. Similarly, there would be no reasonable explanation for acquiring reception status/ coordinate position unless a monitoring has occurred. Nor would the Examiner's characterization be consistent with the description in the specification.

As explained above, the benefit of using a plurality of reporting triggers (criteria) is that the entire cover region can be monitored continuously and instantaneously for changing conditions and for causes of these changes.

Appellant therefore respectfully submits that the Examiner's new argument is without merit. The concept of "broadest reasonable interpretation during prosecution" does not include simply ignoring the majority of words of the claim.

Relative to the Examiner's argument at the bottom of page 26 of the Answer that secondary reference Ma is "... *reasonably pertinent to a particular problem with what she applicant was concerned*", Appellant respectfully submits that secondary reference Ma provides nothing of significance to overcome the deficiency of primary reference Veerasamy.

That is, the Examiner relies upon secondary reference Ma as allegedly demonstrating the acquiring of reception status. However, as Appellant has pointed out repeatedly during prosecution, this acquiring of reception status in Ma is already present in the handoff mechanism of primary reference Veerasamy. Indeed, the feature of acquiring of reception status during a base station handoff is present in all mobile communication systems having the base station architecture, as Appellant has repeatedly explained during prosecution.

As Appellant has repeatedly explained during prosecution, the actual deficiencies of primary reference Veerasamy, relative to the independent claims, is that this reference fails to report the two parameters described in the independent claims to the maintenance server and that it fails to suggest using a plurality of criterion for making reports to this maintenance server.

Secondary reference Ma does not overcome these deficiencies, since the reception status described in this reference for purpose of controlling a handoff to another base station is no different from the conventional handoff technique used in primary reference Veerasamy, as clearly described in paragraphs [0032 & 0033] of Veerasamy. Although Veerasamy does indeed attempt to detect RF holes (see paragraphs [0034 & 0035]), its mechanism clearly consists of using a single criterion (service drop) that reports only

position, and possibly time of the termination of service. The disadvantage of Veerasamy's technique, relative to the present invention, as clearly explained in paragraph [0035], is that Veerasamy's mechanism takes time to develop the database for detecting the RF holes of the cover area and, as pointed out by the present inventor, dynamic changes in the system coverage cannot be readily detected, let alone detecting causes for these dynamic changes.

In contrast, the present invention uses the technique of using a plurality of criterion (criteria) that each cause reporting of at least the two parameters of the current reception status and the current coordinate position, with some exemplary criteria reporting additional information such as time of occurrence. However, in contrast to Veerasamy's single reporting criterion that requires time over which to acquire sufficient data (see paragraph [0035] of Veerasamy), the plurality of reporting criterion (*i.e*, criteria) of the present invention permits data to be collected that provides indication of the causes of the changes occurring in the entire cover area in a relatively short time.

This mechanism is clearly new in the art, and results from the present inventor's discovery of a new problem in this art that the causes of changing conditions over a communication system's entire cover area cannot be readily determined if a single reporting criterion is used, even if more than one current parameter is being reported (see, e.g., lines 5-6 of page 5 of the specification).

Neither primary reference Veerasamy nor secondary reference Ma provides, to a maintenance server, the two parameters described in the independent claims and neither of these two references suggests using a plurality of criterion for making reports to the maintenance server for purpose of developing service-related maps.

Thus, even if Ma were to be combined with Veerasamy, there would be at least one element missing for even the independent claims, so that all claims are clearly patentable over Veerasamy for this reason alone.

Accordingly, most of the remaining new issues raised by the Examiner in the Answer become irrelevant. However, since Appellant would be construed as having acquiesced to one of more of these new issues if no responses are made, Appellant briefly

responds hereinbelow to the remainder of the new issues raised in the Answer, as well as responding to all of the Examiner's Responses in the Answer.

Official Notice

In subparagraph b. at the lower half of page 27, the Examiner, for the first time during prosecution, articulates his position on his invocation of Official Notice. The Examiner alleges that the Appellant was untimely in traversing this invocation of Official Notice.

The Examiner is clearly incorrect. The invocation of Official Notice for the present rejection based on Veerasamy/Ma occurred in the Office Action mailed on April 12, 2010, and it was actually the Appellant, in the Amendment Under 37 CFR §1.111 filed on September 13, 2010, who first articulated on the record that the Examiner was seemingly attempting to invoke Office Notice and traversed such invocation, on page 19 of that response, as follows:

"*Relative to the rejection for claims 3, 4, 9, 14, 15, 17, 19, 22, 23, 28, 33, 34, 36, 41, 42, 51, and 52, wherein the Examiner is understood as having invoked Official Notice, Applicant respectfully requests that the Examiner provide a reasonably combinable reference to support this rejection. Applicant respectfully challenges that the details of these claims are known in the art in the context of the claimed invention, wherein these events and conditions are used for triggers as described in the claims.*"

Thus, contrary to the Examiner's characterization, not only did Appellant timely traverse the invocation of Official Notice in the Veerasamy/Ma rejection, but, more important, the Examiner has never provided during prosecution a reasonable reference demonstrating the plain meaning of the entirety of the language of these claims, *i.e.,* in the context of these claims. As Appellant clearly pointed out, these claims are not claiming these words in isolation.

Rather, the claim language clearly uses words in the context of reporting to a maintenance server in a mobile communication system. The mere statement that terms are known in the art would be insufficient to justify a rejection of these claims, and any

rejection based upon merely an allegation that a word was known in the art would be devoid of common sense.

Therefore, Appellant submits that the real issue here is not the issue of whether the traversal of Official Notice was timely, but, rather, the issue of whether the implied invocation of Official Notice even adds anything of merit to the evaluation of these claims. That is, Appellant respectfully submits that the Examiner fails to provide adequate support for his rejection of these claims by merely asserting that a specific word of a claim is a term of art that was known in the art.

The reason that these claim rejections are not adequately demonstrated by merely asserting that specific words are actually terms of art is that the evaluation improperly ignores the entirety of the language of these claims. Essentially, the Examiner is improperly attempting to evaluate the claimed invention one-word-at-a-time, thereby ignoring the plain meaning of the claim language and the invention as-a-whole. These claims, when all words are properly taken into account, provide additional details on the different criterion used to provide instantaneous evaluation of changing conditions throughout the entire cover area.

Ordering of Steps of Claim 1

On page 28 of the Answer, the Examiner further pursues the argument that steps of independent claim 1 can be "broadly interpreted" as having no "particular order and/or correlation."

In response, Appellant has already pointed out above that the Examiner's position is entirely based upon improperly ignoring the entirety of the wording in the claim limitations. When all wording of the claim is recognized and considered, there is clearly no reasonable confusion about the ordering of the steps of this claim.

The Teachings of Veerasamy/Ma

Beginning on page 29 of the Answer, the Examiner, for the first time during prosecution, acknowledges that Veerasamy's description in Paragraph [0032] related to Docket NEC03p166-RIa (330734/02; WAK.119)

handoffs between base stations is significant in the evaluation of the claimed invention, thereby actually agreeing with the Appellant's argument raised repeatedly during prosecution. Specifically, the Examiner finally agrees with Appellant, for the first during prosecution and contrary to his official rejection, that primary reference Veerasamy does indeed report signal strength for purpose of a handoff to another base station. On the top of page 30, the Examiner similarly concedes that secondary reference Ma likewise does indeed report signal strength for purpose of a handoff to another base station.

The Examiner's fundamental flaw in reasoning occurs in his next sentence on page 30, since neither Veerasamy nor Ma reports the signal strength to the information server, as alleged by the Examiner.

That is, Appellant respectfully and expressly traverses the Examiner's finding of fact on the top of page 30 of the Answer that Veerasamy and Ma disclose "*... sending information including said reception status and said coordinate position to said information collecting server*", since both Veerasamy and Ma merely disclose sending reception status to the base station for purpose of a handoff and neither Veerasamy nor Ma disclose sending reception status to an information collecting server, as alleged by the Examiner on page 30 of the Answer.

Moreover, there is no reasonable nexus between an alleged "lack of ordering" of the claim limitations and the incorrect allegation that Veerasamy/Ma sends the reception status to the information collecting server, as the Examiner implies in final emboldened paragraph, in the middle of page 30 of the Answer.

Veerasamy's Demonstration of "Criteria"

Beginning at the middle of page 30 of the Answer, the Examiner, for the first time during prosecution, addresses the requirement of the independent claims that a plurality of criterion (*i.e.*, "criteria") be used as the basis for reporting information to the information collecting server. In response to the Examiner's characterization that:

"*An artesan would understand that [an] RF hole is caused by a signal loss and a handoff is caused due to decreased signal strength, thus, Veerasamy teaches both criterion[;] signal loss and the decreased signal*",

Appellant respectfully submits that Veerasamy reports only geographic location to its information collecting server, as clearly described in even the Abstract. There is no reporting to this information collecting server in Veerasamy of "signal loss" or "decreased signal" due to handoffs, as alleged by the Examiner in the final paragraph of page 32. The routine reporting of decreased signal strength for purpose of handing off to a new base station occurs in all mobile communication systems having the base station architecture. There is no suggestion in Veerasamy to provide any signal strength information to its information collecting server, as originating in a routine handoff procedure.

Relative to the Examiner's comments on page 31 of the Answer concerning "new claim 86", it is initially noted that the Examiner presumably intended to refer to "claim 87" rather than claim 86, since claim 87 reads "... wherein said predetermined criteria include at least one of signal loss and lowering of said signal reception." In response to the Examiner's comments on page 31, it is noted that page 14 of the Appeal Brief points to lines 2-9 of page 10 of the specification for support of this claim language. This paragraph on page 10 was briefly mentioned above as supporting the reason that the first U.S. practitioner used the word "criteria" in the claims even thought this word does not appear in the originally-filed specification. Recently-added claim 87 is completely consistent with this interpretation.

Therefore, the Examiner is simply incorrect in his characterizations that the information collecting server receives data except that related to geographic location for dropped calls. Moreover, "broadest reasonable interpretation of claim language" has nothing to do with the Examiner's confusion of the engineering facts occurring within primary reference Veerasamy, as the Examiner alleges in the first full paragraph on page 32 of the Answer. Neither Veerasamy nor Ma report decreased signal strength for handoffs to an RF COVERAGE SERVER 195. Veerasamy's paragraph [0032] and Ma's paragraph [0034] both clearly describe that this pilot signal strength as being reported to the base station for purpose of routine handoffs, not to any server related to collecting data

for maintenance for purpose of using data from a plurality of conditions/criteria to quickly determine changes in service over the cover area.

In contrast, the present invention, in claims 3, 22, 41, 51, 79, and 89, exemplarily includes failed handoff information as one possible condition or criterion to report to an information collection server, so that changes of service can be determined for the cover area, given that both position and including reporting both reception status and coordinate position of the mobile terminal are ultimately reported to the information collection server.

Relative to the Examiner's characterization on the top of page 33 of the Answer that: "*... the base station would also read on the claimed "information collecting server*", Appellant respectfully traverses this finding of fact, since Veerasamy clearly distinguishes its information collecting server "RF COVERAGE SERVER 195" from its base stations "BS 101, 102, 103" (see Figure 1 of Veerasamy).

Relative to the Examiner's new argument on page 33 of the Answer that "*... based on a broad interpretation of the claim, and the base station of the Ma [reference] is equivalent to the claimed information server to cause a base station collects information*", Appellant respectfully traverses this finding of fact. The base stations in Ma are merely performing their intended purpose of interfacing with the mobile terminals: there is no information collection process occurring in the handoff routine in either Ma or Veersamy, let alone a collection process in an information collecting server. Secondary reference Ma does not even have an information collecting server. Moreover, the information collecting server of Veerasamy is clearly distinguished from its base stations, as pointed out in the above paragraph.

Relative to the Examiner's new argument on page 33 of the Answer that the base stations of Ma are "*... equivalent to the claimed 'information collecting server'*", Appellants respectfully expressly traverse this finding of fact/allegation by the Examiner. The base stations of Ma and/or Veerasamy have nothing to do with collecting data for purpose of system maintenance, and primary reference Veerasamy clearly has a dedicated server RF COVERAGE SERVER 195 that is clearly distinguished in purpose and location in the system. Therefore, the Examiner's allegation that Ma's base stations are used for

collecting data for maintenance is not based on any objective evidence, since base stations in the conventional mobile phone systems are not known in the art as used for this purpose, as clearly supported by Veerasamy, wherein is clearly demonstrated an RF COVERAGE SERVER 195 that is distinguished from its base stations BS 101, 102, 103. Moreover, "broadest reasonable interpretation" of the claim language has no bearing on this matter, unless the Examiner points out a reasonable reference that indicates that base stations are known in the art as collecting data for service/ maintenance of the system, similar to the role that the RF COVERAGE SERVER 195 provides in Veerasamy. That is, "broadest reasonable interpretation" applies only to ambiguities of the claim language, not to interpretation of prior art references, as implied by the Examiner's new argument.

Relative to the Examiner's new argument on the top of page 35 of the Answer, wherein the Examiner again articulates that the handoff process of primary reference Veerasamy could be considered as a second criterion, Appellant again reiterates that Veerasamy makes no suggestion whatsoever to report either the handoff or the power level initiating the handoff process to its RF COVERAGE SERVER 195. As clearly described in the Abstract, Veerasamy clearly reports only dropped calls to the RF COVERAGE SERVER 195 and only reports the geographic location, not reception status.

Neither Veerasamy nor Ma suggests reporting handover and/or handover failure, or force disconnection to an RF COVERAGE SERVER 195. Nor does either Veerasamy or Ma suggest reporting reception status to the RF COVERAGE SERVER 195.

Relative to the Examiner's argument at the top of page 36, the Examiner simply continues to miss the point. The base stations 106, 108 of secondary reference Ma are simply not equivalent to an information collecting server, such as the RF COVERAGE SERVER 195 of primary reference Veerasamy. Moreover, contrary to the Examiner's confusion in the rejection of record, both primary reference Veerasamy and secondary reference use power level detection for purpose of handoffs and neither reference suggests sending any reception status information, relative to handoffs or for any other criterion, to an RF COVERAGE SERVER collecting maintenance information.

Relative to the Examiner's argument on the top of page 37 of the Answer, Appellant submits that the real issue is whether secondary reference Ma overcomes the deficiencies of primary reference. Ma clearly does not overcome these deficiencies, since secondary reference Ma fails to suggest sending the reception status to any maintenance server such as RF COVERAGE SERVER 195 used in Veerasamy and secondary reference Ma fails to suggest reporting handoffs to any maintenance server. Moreover, paragraph [0032] of primary reference Veerasamy clearly describes that Veerasamy already has the features of secondary reference Ma upon which the Examiner relies, and there is no suggestion in Veerasamy to send information for handoffs from a base station to the RF COVERAGE SERVER 195.

As pointed out above, the benefit of using reporting criteria (*i.e.,* a plurality of criterion), in combination with the two parameters clearly identified in the independent claims, is that the entire cover area can be continuously monitored for changes in the coverage, with the different criterion providing additional information so that changes can be deciphered relatively quickly. Even Veerasamy itself, in paragraph [0035] clearly describes how its mechanism of using of a single criterion, using the reporting parameter(s) of position and, possibly, time of occurrence, requires time to develop data sufficient to detect RF holes over its cover area.

Therefore, primary reference Veerasamy is itself objective evidence that the present invention is novel and non-obvious, due in part to the present inventor's awareness that changes in the cover area service cannot be easily detected using a single reporting criterion and/or limited reporting parameters.

4. The Examiner's Response to GROUND 3

At the bottom of page 37 of the Answer, the Examiner attempts to respond to GROUND 3. However, relative to primary reference Veerasamy, the issue in GROUND 3 is the failure of Veerasamy to report the second parameter, reception status (e.g., received signal quality or signal intensity of a common channel), to the RF COVERAGE SERVER 145 when reporting the dropped calls. The Examiner has failed to address this issue.

Clearly, there is no need for this second parameter in Veerasamy's technique and, therefore, no reasonable rationale to modify Veerasamy to arrive at the claimed invention. The present inventor has recognized that, by reporting both position and reception status to the information collecting server, a number of different criteria can be reported, thereby permitting information for a plurality of maps related to these different criteria to be developed.

Veerasamy has clearly failed to arrive at this invention, and there is no reasonable rationale currently of record to modify Veerasamy other than the roadmap of the claimed invention.

5. The Examiner's Response to GROUND 4

On page 38 the Examiner attempts to articulate a response to GROUND 4, as follows:

"*The examiner asserts that it would be obvious to one skilled in the art to also modify [the] combination so that [the] combination would report a location in signal information when a new call is not going through.*"

Appellant respectfully submits that the Examiner has merely made a conclusory statement based on a simple statement that he was not persuaded by Appellant's arguments. The Examiner provides no objective support for this conclusion or even demonstrated that the problem whose solution is defined in the claimed invention was even considered to be a problem in the art. Moreover, it is noted that the Examiner has failed to even address the real issue of GROUND 4, the additional impact of the "admitted art" as described in the Appellant's original specification.

Therefore, it is further pointed out that lines 3-6 on page 5 of the present application clearly explains that the mere recording of reception status and positional information does not appropriately recognize causes of changes in the reception status and the phenomena brought about by changes in the reception status. In contrast, the present invention defines trigger points for different predetermined conditions, thereby providing a mechanism that addresses this deficiency of this prior art.

6. The Examiner's Response to GROUND 5

Near the bottom of page 38, the Examiner attempts to articulate a response for GROUND 5. However, the Examiner's response misunderstands this claim language, since the "trigger" of this claim originates from the information collection server, not the detection of an RF hole by the mobile station. Veerasamy has nothing corresponding to a trigger sent out by the RF COVERAGE SERVER 195, that requests that the mobile stations sent in a report.

Therefore, the Examiner has failed to address the issue of this GROUND 5.

7. The Examiner's Response to GROUND 6

Beginning at the top of page 39, the Examiner attempts to articulate a response for GROUND 6. However, the Examiner's response is merely a conclusory statement that lacks any objective support in any reference currently of record. Contrary to the Examiner's implications, neither Veerasamy nor Ma suggests making a service map for handoffs between base stations, neither suggests sending pilot signal strength reports to an information collecting server, and neither suggests using more than one criterion for data collection in the RF COVERAGE SERVER 195.

8. The Examiner's Responses to GROUND 7

Relative to the Examiner's comments concerning Official Notice, beginning at the top of page 40, Appellant again points out that the invocation of Official Notice was timely traversed in the Amendment Under 37 CFR § 1.111 filed on September 13, 2010, which Docket NEC03p166-RIa (330734/02; WAK.119)

was Appellant's first response to the rejection based on Veerasamy/Ma. As Appellant noted in that response, the mere knowledge in the art of terms of these claims does not mean that the plain meaning of the entirety of the language of these claims is demonstrated, since these claims clearly require a reporting to an information collection server, not the mere existence of these terms, as the rejections presume.

Stated slightly differently, even if it were to be construed that Appellant failed to timely traverse the Examiner's implied invocation of Official Notice, the mere statements of the Examiner's invocation of Official Notice does not establish the sufficiency of the rejection, since the mere existence of terms of art does not demonstrate the plain meaning of these claims. The present invention uses these terms of art/concepts as inputs into an information collecting server for purpose of determining changes of status for the cover area of the mobile communication system, without having to send out measurement teams and without having to wait for the development of data as based on a single criterion.

Moreover, as Appellant mentioned above, primary reference Veerasamy uses a single criterion to develop information for RF holes, and Veerasamy paragraph [0035] clearly describes that time is needed to gather sufficient information for this database. A key advantage of the feature of the present invention to use more than one criterion is that much more information can be obtained in much shorter time.

Relative to the Examiner's comments at the middle of page 40, concerning claim 74, Appellant explained in the Appeal Brief that Veerasamy inherently fails to immediately report the call drop, as clearly explained in even the Abstract: Veerasamy's mobile station inherently must wait to report until it has again reconnected to the system. In contrast, this claim is referring to those criteria that can be reported immediately.

In response to the Examiner's allegation that "*[b]ased on a broad interpretation of [the] claim, immediately could be within any time after the mobile device gains its capability or connect ability*", Appellant respectfully submits that the Examiner is clearly incorrect, since the claim language clearly states "... without said mobile radio terminal having first lost said existing communication connection." The plain meaning of this clarification in the claim itself precludes the Examiner's interpretation.

Moreover, the Examiner's reliance on Joeng is completely misplaced, since this reference is directed to soft swap handoffs and does not suggest providing information to a server collecting information for system maintenance/server.

Relative to the Examiner's clarifications, on page 41 of the Answer, for the rejection of claim 77, as well as the Examiner's comments on page 42 for claim 78, there is no suggestion in any reference currently of record to develop multiple service-related maps, based on different criteria. The Examiner's comments are merely conclusory statements based only on the roadmap of the present invention.

Relative to the Examiner's comments on page 42 for claim 79, there is no suggestion in either Rappaport or Ma for providing service maps. The Examiner's comments are merely conclusory statements based only on no other objective evidence except the roadmap of the present invention. Even the Examiner's own characterization of Rappaport clearly indicate that this reference has nothing whatsoever with reporting information to a server collecting data for maintenance/service of a mobile communication system.

Relative to the Examiner's comments on the bottom of page 42 for claim 86, the Examiner continues to miss the point that this claim is referring to a trigger signal sent out by the information collecting server, not a trigger within the mobile terminals. The Examiner's reliance on Tong adds nothing to the evaluation or to the Examiner's response.

Accordingly, the Examiner has failed to even understand the plain meaning of the language of claim 86, let alone provide a proper response to Appellant's argument.

9. The Examiner's Responses to GROUND 8

On page 43 of the Answer, the Examiner raises a new issue by clarifying this rejection for claim 80 and 81. Relative to the Examiner's first claim construction, the Examiner is clearly incorrect, since the " ... at least one of ..." relates only to the claim clause "... a reception quality and intensity of a radio signal ... " and does not relate to the

claim clause "... information relating to a location of the mobile radio terminal ....", as alleged by the Examiner.

Relative to the Examiner's second claim construction at the bottom of page 43, Appellant has already pointed out on page 35 of the Appeal Brief that the Mile'n reference is directed to handoffs between base stations. It, therefore, adds nothing of merit to an evaluation based on Veerasamy and/or Ma.

10. The Examiner's Response to GROUND 9

On page 44 of the Answer, the Examiner responds to Ground 9, substantially repeating the first claim construction as in the response to Ground 8. However, as pointed out above, this claim construction is clearly improper, since "... at least one of ..." in claim 81 refers only to "... a reception quality and intensity of a radio signal..." and does not refer to "... information relating to a location of the mobile radio terminal." Primary reference Veerasamy does not have information related to reception quality or intensity of the radio signal reported to its RF COVERAGE SERVER 195 and so fails to demonstrate the plain meaning of this claim language.

Relative to the Examiner's comments on the lower part of page 45 of the Answer, wherein the Examiner points to Imai, Appellant respectfully submits that claim 82 clearly describes additional details for the description in claim 81, wherein is clearly described that the measurement information is related to having detected a deterioration of the communication status as being monitored by a first unit. Even the Examiner's own characterization of Imai on page 45 reflects that this reference is merely demonstrating that a common pilot channel is used for measuring communication quality. This simple fact does not demonstrate that the mobile station would report quality of the common pilot channel to an RF COVERAGE SERVER 195 upon detecting a deterioration of the quality, given that such monitoring of quality of a common pilot channel would be considered as being known in the art as merely related to the need to implement a handoff procedure to another base station. The Examiner's comments on page 45 are merely conclusory

statements based only on improper hindsight based solely on the roadmap of the disclosure of the present application.

CONCLUSION

In view of the foregoing, Appellant respectfully submits that the rejections of record clearly fail to provide a *prima facie* obviousness rejection for any of the claims since there would be at least one element missing even for the independent claims even if all references were to be combined. The benefit of the present invention over Veerasamy's method is that reporting location and reception status to a maintenance server for a plurality of conditions/criterion permits changes of the coverage area to be detected rapidly. Veerasamy's method is not sensitive to the different conditions that would detect changes rapidly and takes a relatively long time to develop its service-related data.

Therefore, Appellant submits that claims 1-21 and 24-33, all the claims presently pending in the application, are clearly enabled and patentably distinct from the prior art of record and in condition for allowance. Thus, the Board is respectfully requested to remove all rejections of claims 1-21 and 24-33.

Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Attorney's Deposit Account number 50-0481.

Respectfully submitted,

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